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ABSTRACT

This study investigated the causal attributions juvenile delinquents make for other's behavior and the salient pieces of information they use to arrive at these attributions. Participants were 82 male juvenile offenders selected through an a priori power analysis, drawn randomly from the population of juveniles incarcerated at a correctional facility in a southeastern state. A six-stage concurrent mixed methodology analysis, using both qualitative and quantitative data analysis techniques, revealed that juvenile offenders committed violence attributional errors nearly 53% of the time. Black juvenile offenders were more likely to commit violence attributional errors (inaccurate causal attributions) than were their White counterparts. A positive relationship was found between the number of prior arrests and the number of violence attributional errors. A phenomenological analysis revealed seven themes that arose from juveniles' reasons for their causal attributions: (1) self-control; (2) violation of rights; (3) provocation; (4) irresponsibility; (5) poor judgment; (6) fate; and (7) conflict resolution. A combination of these themes was related to age, ethnicity, and prior arrests. An exploratory factor analysis revealed that the seven themes fell into four meta themes. Ipsative/cluster analyses identified three profiles of delinquents based on their violence attribution reasons. The paper discusses the implications of these findings. (Contains 30 references, 4 tables, and 2 figures.) (SLD)

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Attributions Toward Violence of Male Juvenile Delinquents:

A Concurrent Mixed-Methodological Analysis

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Abstract

Violence among youth has reached epidemic proportions. Despite considerable research, however, we still do not understand why adolescents become involved in violent acts. Thus, this study investigated male juvenile delinquents' causal attributions they make for others' behavior, and the salient pieces of information they utilize in arriving at their attributions. Participants were 82 male juvenile offenders, selected via an *a priori* power analysis, who were drawn randomly from the population of juveniles incarcerated at a correctional facilities located in a large southeastern state.

A six-stage concurrent mixed-methodological analysis, utilizing both qualitative and quantitative data-analytic techniques, revealed that the juvenile offenders committed violent attributional errors nearly 53% of the time. Black juvenile offenders were more likely to commit violence attributional errors than were their White counterparts. Also, a positive relationship was found between the number of prior arrests and the number of violence attributional errors. A phenomenological analysis revealed the following seven themes that arose from juveniles' reasons for their causal attributions: self-control, violation of rights, provocation, irresponsibility, poor judgment, fate, and conflict resolution. A combination of these themes was related to age, ethnicity, and number of prior arrests. An exploratory factor analysis revealed that the seven themes fell into four meta-themes. Finally, an ipsative/cluster analysis identified three profiles of delinquents based on their violence attribution reasons. Implications are discussed.

Attributions Toward Violence of Male Juvenile Delinquents: A Concurrent Mixed-Methodological Analysis

Considerable research has focused on concomitants of violent behavior. These studies have identified a number of genetic, biological, and familial antecedents, including intellectual functioning, economic deprivation, chronic parental unemployment, poor childrearing, child-abuse history, hyperactivity-impulsivity-attention deficit, early onset of aggression, and antisocial behavior (e.g., McCart, 1994). Moreover, Cornell (1987) found that the best single predictor of violence is past violent behavior. Nevertheless, most of these factors are relatively immutable, and thus, at best, identify youth who are at risk for violent behavior, having only minimal implications for intervention. Conversely, the area of social cognition, including theory on attributions, appears to offer a viable avenue for research on the antecedents of violent behavior (Byrne, 1993). Indeed, Guthrie and Betancourt (1991) found that attribution processes play a role in children's reactions to violence.

Attribution theory (Kelley, 1973) is concerned with the cognitive processes underlying an individual's causal inferences for events occurring within his or her physical and social environment. According to Kelley (1973), attribution theory examines the information people use in making causal inferences and what they do with this information in order to answer causal questions. Within Kelley's model, the question of interest is whether an event should be attributed to the provocation of a target (i.e., stimulus), to exacerbating conditions (i.e., circumstance), or to the actor's disposition (i.e., person) (Zebrowitz, 1990).

Despite considerable research on youthful aggression, few studies have examined the role of social cognitive factors, in particular, attributions, in placing children at risk for involvement in acts of violence. Additionally, from a methodological standpoint, these investigations typically have made no attempt to approximate experimental conditions by manipulation of an independent variable. This methodological flaw may have culminated in findings of inaccurate predictions of violence (Capaldi & Patterson, 1993). Thus, the major purpose of this study was to examine sensitivity to violence as assessed by an attributional

measure of incarcerated juvenile delinquents. Specifically, the present investigation sought to examine juvenile offenders with respect to the proportions of inaccurate causal attributions (i.e., violence attributional errors) they make for others' behaviors, and the salient pieces of information they utilize in arriving at their attributions (i.e., reasons for violence attributions). Another goal was to develop a typology of reasons for violent attributions, as well as to determine whether these reasons predict juveniles delinquents' violence attributional errors. The current inquiry also attempted to ascertain the antecedent correlates of juvenile offenders' causal attributions. Finally, of particular interest was whether the profiles of juvenile delinquents can be developed based on their violence attribution reasons.

It was believed that an understanding of the attributional styles of aggressive, undersocialized youth would have implications for confronting the rising concerns about violence among today's youth. Also, it was hoped that this study will contribute to the knowledge base relating to juvenile delinquents by determining factors which place them at risk, thus helping to identify effective treatment programs and ultimately reducing the overall rate of incarceration.

Method

Participants

The sample of 82 male juvenile offenders was drawn randomly from the population of juveniles incarcerated at a correctional facilities located in a large southeastern state. This sample size was selected via an *a priori* power analysis because it provided acceptable statistical power (i.e., .803) for detecting a moderate correlation (r = .30) at the (two-tailed) .05 level of significance (Erdfelder, Faul, & Buchner, 1996). The 82 participants represented 15% of the offenders incarcerated at that facility. This sample, which comprised 23.2% Caucasian-American and 76.8% African-American boys, ranged in age from 12 to 18 years (M = 15.46, SD = 1.28), with an average of 3.17 prior arrests (SD = 2.72).

Instruments and Procedure

Participants were administered the Violence Attribution Survey (VAS), which was developed specifically for the present investigation. The VAS is a 12-item questionnaire designed to assess

attributions made by the juveniles for the behavior of others involved in a variety of violent acts. Each item consists of a vignette, followed by three possible attributions (i.e., person, stimulus, and circumstance) presented in multiple-choice format, and an open-ended question asking the juveniles their reason for choosing the response that they did. The vignettes were constructed in such a way as to allow for the perceived plausibility of any one of the three possible attributions. For the present investigation, the VAS generated scores that had a classical theory alpha reliability coefficient of .71 (95% confidence interval = .61, .79).

Analysis

A concurrent mixed-methodological analysis (CMMA), as described by Onwuegbuzie and Teddlie (in press), was undertaken to analyze the data. This analysis involved the use of qualitative and quantitative data analytic techniques in a complimentary manner. Utilizing the framework of Greene, Caracelli, and Graham (1989), the purpose of the mixed-methodological analysis was *complementarity*, that is, using quantitative and qualitative techniques to measure overlapping but also different aspects of the underlying phenomenon, namely, violence attributional errors. The VAS generated both quantitative information (i.e., multiple-choice responses) and qualitative responses (i.e., reasons for choosing responses). These two measures assessed similar, but distinct aspects of attributional errors.

The CMMA involved six stages. The first stage (i.e., exploratory stage) consisted of the recoding of the mutliple-choice responses (i.e., person, stimulus, and circumstance). Because stimulus and circumstance responses represent attributional errors, these two responses were then combined and contrasted to person attributions. That is, responses representing external attributions (i.e., stimulus and circumstance) were compared to responses signifying dispositional attributions (i.e., person), such that external attributions were given a score of 1 and dispositional attributions were given a score of 0. Responses to the 12 items of the VAS were summed to produce an index of violence attributional errors (range 0-12), with high scores being indicative of persons who committed a high proportion of attributional errors. These scores were then used to determine the juvenile delinquents' overall violence

attributional error rate. This error rate served as what Onwuegbuzie (2001) termed as a *manifest effect size* (i.e., an effect size pertaining to observable content).

The second stage (i.e., exploratory stage) consisted of a phenomenological mode of inquiry to examine students' reasons for their attributions (i.e., person, stimulus, and circumstance) (Goetz & Lecompte, 1984). Specifically, a modification of Colaizzi's (1978) phenomenological analytic methodology was utilized. The procedural steps used were as follows: (a) all the juveniles' reasons were read in order to obtain an overall picture for them; (b) these adolescents' responses were then *unitized* (Lincoln & Guba, 1985); (c) these units of information served as the basis for extracting a list of nonrepetitive, nonoverlapping significant statements (i.e., *horizonalization* of data), with each statement treated as having equal status. Units were eliminated that contained the same or nearly the same statements, such that each unit corresponded to a unique violence attribution reason; (d) meanings were formulated by specifying the meaning of each significant statement (i.e., unit); and (e) clusters of themes were organized from the aggregate formulated meanings, with each cluster containing units that appeared similar in content, such that each cluster signified a distinct emergent theme (i.e., *method of constant comparison*; Lincoln & Guba, 1985). These clusters of themes were compared and contrasted with the original descriptions in order to validate them (i.e., to assess *trustworthiness* of categorization). This five-step method of analysis was utilized to reveal a number of themes relating to the offenders' reasons for their attributions.

The third stage (i.e., exploratory stage) of the mixed-methodological analysis involved utilizing descriptive statistics to analyze the hierarchical structure of the emergent themes (Onwuegbuzie & Teddlie, in press). In particular, each theme was *quantitized* (Tashakkori & Teddlie, 1998). Specifically, for each participant, a score of "1" was given for a theme if it represented at least one of the reasons cited for the 12 attributions made on the VAS; otherwise, a score of "0" was given for that theme. That is, for each sample member, each theme was quantitized either to a score of "1" or a "0," depending on whether it was represented by that individual. This dichomotization led to the formation of an *inter-respondent*

matrix (i.e., *participant x theme matrix*) (Onwuegbuzie, 2001). This matrix contained a combination of 0s and 1s. The quantitizing of themes allowed the computation of an additional *manifest effect size*. Specifically, a *frequency effect size* measure (Onwuegbuzie, 2001) was obtained by calculating the frequency of each theme from the inter-respondent matrix, then converting these frequencies to percentages. These percentages represented the prevalence rate of each theme. The inter-respondent matrix was used to determine the relationship between responses to each theme (i.e., 0 vs. 1) and the violence attributional error rate. The associations between responses to each theme and the demographic variables (i.e., age, ethnicity, and the number of prior arrests) also were examined.

The fourth stage of the mixed-methodological analysis involved the utilization of the inter-respondent matrix to conduct an exploratory factor analysis to ascertain the underlying structure of these themes (i.e., exploratory stage). This factor analysis determined the number of factors underlying the themes. These factors, or latent constructs, represented *meta-themes* (Onwuegbuzie, 2001) such that each meta-theme contained one of more of the emergent themes. The *trace*, or proportion of variance explained by each factor after rotation, served as a *latent* effect size for each meta-theme (Onwuegbuzie, 2001). As described by Onwuegbuzie (2001), an additional *latent effect size* was computed via the use of odds ratios. Specifically, the odds ratios among the meta-themes were determined and used to compare prevalence rates among the meta-themes (Onwuegbuzie, 2001). Also, a *manifest effect size* was computed for each meta-theme by determining the combined *frequency effect size* for themes within each meta-theme (Onwuegbuzie, 2001).

The fifth stage (i.e., confirmatory stage) of the mixed-methodological analysis involved the determination of antecedent correlates of the emergent themes that were extracted in Stage 1 and quantitized in Stage 2. This phase utilized the inter-respondent matrix to undertake (a) a series of correlational analyses and Fisher's Exact tests, depending on whether the demographic variables were measured on the interval scale (i.e., age and number of prior arrests) or the nominal scale (i.e., ethnicity), to test the hypothesis that the selected background variables would be related to each of the themes; and

(b) a canonical correlation analysis to examine simultaneously the relationship between the themes and the demographic variables.

The sixth and final stage (i.e., exploratory stage) of the mixed-methodological analysis involved narrative profile formation. Specifically, the number of average profiles (Tashakkori & Teddlie, 1998) was determined using an ipsative approach in which juveniles' responses to each theme were interpreted relative to their responses to the other themes (Block, 1957) in the following manner: (a) for each adolescent, the emergent theme scores (i.e., 0 or 1) were ranked such that each scale took on a value from one through six; and (b) the measure of similarity used for the analysis was based on the theme scores ranked from lowest to highest within each profile. An intra-individual correlation matrix was then formed by correlating each pair of profiles, yielding $(n)(n\text{-}1)/2$ Spearman Rho values (where n was the number of respondents). This correlation matrix was cluster-analyzed in order that individualistic patterns could be characterized for each offender sample member. The formation of average profiles represented the *qualitizing* of previously-quantitized themes (Tashakkori & Teddlie, 1998). This eigenvalues for each cluster-solution were compared to determine the number of interpretable profiles. Each profile was compared and contrasted by determining whether, within each theme, the confidence intervals (i.e., standard error bars) overlapped, as well as by computing within-theme manifest effect sizes (Onwuegbuzie, 2000). Finally, each profile group was compared with respect to the selected demographic variables.

Results

Stage 1 Analyses

Scores on the VAS ranged from 0 to 12, with a mean number of attributional errors of 6.30 (*SD* = 2.82). The 95% confidence interval (*CI*) associated with this mean number of attributional errors was 5.69 to 6.91. In other words, on average, the juvenile offenders were committing attributional errors 52.99% of the time (*SD* = 23.44%; 95% *CI* = 47.92%, 58.06%). Encouragingly, an examination of the standardized skewness (-0.30) and kurtosis (-1.30) coefficients pertaining to the number of violence attributional errors

made by each juvenile sample member, as well as the corresponding normal probability plot, suggested no marked departure from normality. This evidence of normality, coupled with the fact that a random sample was obtained, indicates that, for any particular item on the VAS, we can expect with 95% confidence that between 47.92% and 58.06% juvenile delinquents would make attributional errors. This suggests a moderate-to-large effect size.

Interestingly, Black juvenile delinquents ($M = 7.05$, $SD = 3.84$) were more likely ($t = 5.10$, $p < .0001$) to commit violence attributional errors than were their White counterparts ($M = 3.84$, $SD = 2.36$). The effect size associated with this difference, as measured by Cohen's (1988) d, was .91, which was extremely large. Further, a positive relationship between the number of prior arrests and the number of violence attributional errors was found ($r = .28$, $p < .0001$). This association represented a moderate effect size. However, no relationship between age and the number of violence attributional errors emerged ($r = -.17$, $p > .05$).

Stage 2 Analyses

The juvenile participants listed a total of 441 unique reasons across the 12 VAS items ($M = 36.75$, $SD = 8.36$). Table 1 presents the themes that emerged from the students' violence attribution reasons, alongside their attribution categories, and examples of statements representing each theme. It can be seen that the following seven themes were extracted from these responses: self-control, violation of rights, provocation, irresponsibility, poor judgment, fate, and conflict resolution. The first two themes were associated with the actor's disposition (i.e., person), the middle three themes pertained to the provocation of a target (i.e., stimulus), and the last two themes represented the exacerbating conditions (i.e., circumstance). The overall inter-rater reliability between the two coders pertaining to the categorization of the units into the six themes was .95.

Stage 3 Analyses

The prevalence rates of each theme (i.e., (manifest) frequency effect sizes) also are presented in Table 1. Interestingly, the three stimulus themes, namely, provocation, irresponsibility, and poor judgment,

were the most endorsed themes, with more than three-fourths of the sample citing one or more reasons that fell into these categories. The two person themes, namely self-control and violation of rights, were the next most endorsed themes, with 58.5% and 42.7% of the offenders providing violence attribution reasons that pertained to these classifications, respectively. Finally, the two circumstance themes, namely fate and conflict resolution, were the least endorsed themes.

The intercorrelations among the seven themes (not presented), after applying the Bonferroni adjustment (Onwuegbuzie & Daniel in press), only the correlation between responses categorized as belonging to the self-control theme (i.e., Theme 1) and responses belonging to both the violation of rights theme (i.e., $r = .33$, $p < .003$) and the conflict resolution theme (i.e., $r = .39$, $p < .0002$) were statistically significant. Using Cohen's (1988) criteria, these relationships were moderate. Specifically, juvenile delinquents who tended to cite lack of self-control on the part of the actor as the reason for their violence attributions also tended to provide violation of rights and conflict resolution as explanations for their attributions.

A series of independent samples *t*-tests was utilized to compare juveniles who endorsed each of the seven themes to those who did not endorse these themes with respect to the violence attributional error rate. These results are displayed in Table 2. It can be seen that, after applying the Bonferroni adjustment, (1) juveniles who endorsed the self-control theme tended to make *less* violence attributional errors than did their counterparts; (2) juveniles who endorsed the violation of rights theme tended to make *less* violence attributional errors than did their counterparts; (3) juveniles who endorsed the provocation theme tended to make *more* violence attributional errors than did their counterparts; and (4) juveniles who endorsed the poor judgment theme tended to make *more* violence attributional errors than did their counterparts. The Cohen's *d* effect sizes pertaining to these differences were extremely large, ranging from .90 to 1.15.

Stage 4 Analysis

An exploratory factor analysis was used to determine the number of factors underlying the six themes. Specifically, a maximum likelihood factor analysis was used. This technique, which gives better

estimates than does principal factor analysis (Bickel & Doksum, 1977), is perhaps the most commonly-used method of common factor analysis (Lawley & Maxwell, 1971). As recommended by Onwuegbuzie and Daniel (2000), the correlation matrix in Table 3 was used to undertake the factor analysis. An orthogonal (i.e., varimax) rotation was used because of the low degree of correlations among the themes. This analysis was used to extract the latent constructs. As conceptualized by Onwuegbuzie (2001), these factors represented *meta-themes*.

The eigenvalue-greater-than-one rule, also known as K1 (Kaiser, 1958), was implemented to ascertain an appropriate number of factors to retain. This technique resulted in a four factors (i.e., meta-themes). The "scree" test (Cattell, 1966; Zwick & Velicer, 1986) also suggested that four factors be retained. This four-factor solution is presented in Table 3. Using a cutoff correlation of 0.5, recommended by Hair, Anderson, Tatham, and Black (1995) as an acceptable minimum loading value, it can be seen from this table that the following themes loaded significantly on the first factor: conflict resolution, self-control, and violation of rights; the following themes loaded on the second factor: poor judgment and irresponsibility; the following theme loaded on the third factor: fate; and the following theme loaded on the fourth factor: provocation. Clearly, the first meta-theme (i.e., Factor 1) can be labeled *disposition of actor and interaction with stimulus* (25.57% explained). The second meta-theme can be termed *cognitive-based stimulus* (21.29% explained). The third meta-theme represents *circumstance* (15.14% explained). Finally, the fourth meta-theme denotes *emotionally-based stimulus* (14.29% explained). These four meta-themes combined explained 76.29% of the total variance. This total proportion of variance represents a *latent effect size*, which can be considered very large. The manifest effect sizes associated with the four meta-themes (i.e., the prevalence rate of each meta-theme based on the juveniles' violence attribution reasons) were as *follows: disposition of actor and interaction with stimulus* (71.9%), *cognitive-based stimulus* (92.7%), *circumstance* (40.2%), and *emotionally-based stimulus* (76.8%). The thematic structure is presented in Figure 1.

Computation of odds ratios revealed that the *cognitive-based stimulus* meta-theme was 6.00 (95%

CI = 1.02, 35.40) times more likely to be endorsed than was the *disposition of actor and interaction with stimulus* meta-theme, 1.53 (95% *CI* = 0.29, 8.13) times more likely to be endorsed than was the *circumstance* meta-theme, and 3.75 (95% *CI* = 0.69, 20.38) times more likely to be endorsed than was the *emotionally-based* meta-theme. Also, the *emotionally-based* meta-theme was 1.25 (95% *CI* = 0.41, 3.81) times more likely to be endorsed than was the *disposition of actor and interaction with stimulus* meta-theme and 1.21 (95% *CI* = 0.42, 3.47) times more likely to be endorsed than was the *circumstance* meta-theme. Finally, the *disposition of actor and interaction with stimulus* meta-theme was 1.38 (95% *CI* = 0.51, 3.75) more likely to be endorsed than was the *circumstance* meta-theme. In summary, the odds-ratios ranged from 1.21 to 6.00.

Stage 5 Analysis

A series of correlational analyses, using the Bonferroni adjustment to control for familywise error ($p < .05$), indicated that age was statistically significantly related to self-control ($r = .30$, $p < .01$). Specifically, older juveniles were more likely to endorse the self-control theme than were the younger offenders. Age was not statistically significantly related to any other theme. Also, the number of prior arrests was negatively related to violation of rights ($r = -.28$, $p < .01$). That is, delinquents with the greater number of prior arrests were less likely to endorse the violation of rights theme. Number of prior arrests was not statistically significantly related to any of the other themes.

A series of Fisher's Exact tests, using the Bonferroni adjustment to control for familywise error, indicated that the White juvenile delinquents were statistically significantly more likely than were the Black offenders to provide a reason pertaining to self-control (84.21% vs. 50.79%; *Cramer's V* = 0.29; odds ratio = 5.15, 95% *CI* = 1.48, 18.18) and violation of rights (78.95% vs. 31.75%; *Cramer's V* = 0.40; odds ratio = 8.06, 95% *CI* = 2.37, 27.78), and less likely than were the Black offenders to cite a reason relating to provocation (47.37% vs. 85.71; *Cramer's V* = 0.38; odds ratio = 6.67, 95% *CI* = 2.12, 20.93).

A canonical correlation analysis was undertaken to examine simultaneously the relationship between the seven themes and the three demographic variables (i.e., age, ethnicity, and number of prior

arrests). The seven themes were treated as the dependent set of variables, whereas the demographic variables were utilized as the independent multivariate profile. The canonical analysis revealed that the first canonical correlation (R_{c1} = .68) appeared to be large, contributing 46.7% (i.e., R_{c1}^2) to the shared variance. The remaining two canonical roots were not statistically significant. Consequently, only the first canonical correlation was interpreted

Data pertaining to the first canonical root are presented in Table 4. This table provides both standardized function coefficients and structure coefficients (Onwuegbuzie & Daniel, 2000). Using a cutoff correlation of 0.3 (Lambert & Durand, 1975), the standardized canonical function coefficients revealed that self-control, violation of rights, provocation, and conflict resolution made important contributions to the set of themes--with violation of rights being the major contributor. With respect to the demographic set, age and ethnicity made noteworthy contributions.

The structure coefficients revealed that self-control, violation of rights, provocation, and poor judgment made important contributions (i.e., were practically significant) to the first canonical variate. The square of the structure coefficient indicated that these variables explained 31.8%, 44.1%, 27.2%, and 16.3% of the variance, respectively. With regard to the demographic cluster, ethnicity made the strongest contribution, with age making a moderate contribution. The square of the structure coefficient indicated that ethnicity and age explained 67.5% and 34.8% of the variance, respectively.

In the canonical function, conflict resolution appeared to serve as a suppressor variable because the standardized coefficients associated with this variable was moderate, whereas the corresponding structure coefficient for age was small. It is likely that conflict resolution was a suppressor variable because of its relationship with one or more of the other themes. In particular, as noted above, conflict resolution was statistically significantly related to self-control. Thus, conflict resolution improved the predictive power of the themes by suppressing variance that was irrelevant to this prediction as a result of its relationship with self-control.

Stage 6 Analysis

Finally, the quantitized dichotomous variables that formed the seven themes were qualitized via narrative profile formation (Tashakkori & Teddlie, 1998). Specifically, the number of average profiles (Tashakkori & Teddlie, 1998) was determined using an ipsative approach in which participants' responses to each theme were interpreted relative to their responses to the other themes (Block, 1957). An intra-individual correlation matrix was then formed by correlating each pair of profiles, yielding 3,321 (i.e., 82 x 81/2) Spearman Rho values. This correlation matrix was cluster-analyzed utilizing the VARCLUS procedure of the Statistical Analysis System (SAS Institute Inc., 1990) in order that individualistic patterns could be characterized for each juvenile delinquent. Offenders having similar profiles were expected to cluster together. The criterion of percentage variation explained by each cluster decided the most meaningful cluster solution.

In an attempt to obtain the minimum cluster solution that explained the maximum variation, the criterion of terminating the splitting of clusters when each cluster has only one eigenvalue greater than one was applied. Also, cluster solutions that added less than 5% to the explained variation were eliminated from consideration (Onwuegbuzie, 2000). Thus, a three-cluster solution, which explained 58.9% of the variation, was selected as the most meaningful and parsimonious.

The profiles for the resulting three clusters are displayed pictorially in Figure 2. The seven themes are presented on the horizontal axis, whereas the proportion of students who provided an attribution reason belonging to each theme is presented on the vertical axis. As such, each of the three emergent profiles represented an average set of responses across each theme. As can be seen, members of Cluster 1 (n = 35) were extremely unlikely to endorse the self-control (probability (p) = .20) and conflict resolution (p = .20) themes. These juveniles were moderately likely to endorse the violation of rights (p = .43) and fate (p = .40) themes. However, they were very likely to endorse the provocation (p = .80), irresponsibility (p = .80), and poor judgment (p = .86) themes.

Individuals in Cluster 2 (n = 23) highly rated the self-control (p = .83), violation of rights (p = .70), provocation (p = .83), irresponsibility (p = .83), and poor judgment (p = .74) themes. Additionally,

they were moderately likely to endorse the conflict resolution theme (p = .57). However, they were unlikely to provide a reason associated with fate (p = .17).

Members of Cluster 3, like the former cluster, highly rated the self-control (p = 1.00), provocation (p = .70), irresponsibility (p = .90), and poor judgment (p = .95) themes. Also, they were moderately likely to endorse fate (p = .63). However, this group was highly unlikely to endorse the violation of rights (p = .10) and conflict resolution (p = .15) themes. Interestingly, although no difference was found between members of the three clusters with respect to number of prior arrests (F [2, 79] = 1.02, $p > .05$) and ethnicity (Fisher's Exact p = .52; χ^2 = 1.45, $p > .05$), a difference among the three groups emerged with regard to age (F [2, 79] = 8.01, $p < .001$). The effect size associated with this latter difference was moderate (ω^2 = .18, ε^2 = .21). Scheffé's post-hoc comparisons revealed that members of Cluster 1 (M = 14.86, SD = 1.35) tended to be younger than were members of Cluster 2 (M = 15.82, SD = 1.11) and Cluster 3 (M = 16.05, SD = 0.94).

Discussion

The present study investigated male juvenile delinquents' causal attributions they make for others' violent behavior, and the salient pieces of information they utilize in arriving at their attributions, using a six-stage concurrent mixed-methodological analysis. The first stage revealed that the juvenile offenders committed violent attributional errors nearly 53% of the time. This finding is consistent with Dodge and Coie (1987), who found that youth are more likely to externalize blame in what they perceive as provocative interpersonal interactions. Because it is likely that the aggressive, anti-social behavior demonstrated by some juveniles may be due to their inaccurate or biased appraisals of interpersonal exchanges (Dodge & Coie, 1987), the present finding regarding the rate of violence attributional errors is particularly informative, albeit disturbing. Moreover, the juvenile delinquents' tendency to commit violence attributional errors might explain, at least in part, their prison status. Future research should investigate further this possible link.

An additional purpose of the study was to develop a typology of reasons for violent attributions, as

well as to determine whether these reasons predict juveniles delinquents' violence attributional errors. The phenomenological analysis (Stage 2) revealed the following seven themes that arose from juveniles' reasons for their causal attributions: self-control, violation of rights, provocation, irresponsibility, poor judgment, fate, and conflict resolution. The first two themes were associated with the actor's disposition (i.e., person), the middle three themes pertained to the provocation of a target (i.e., stimulus), and the last two themes represented the exacerbating conditions (i.e., circumstance). This result suggests that offenders' violent attribution reasons represent a multidimensional construct. Moreover, the finding that the three stimulus themes, namely, provocation, irresponsibility, and poor judgment, were the most endorsed themes, with more than three-fourths of the sample citing one or more reasons that fell into these categories, indicate that stimulus causal attributions are most responsible for violence attributional errors. Simply put, juvenile delinquents appear to blame the victim more often than they blame the perpetrator. Of the three stimulus reasons cited, the adolescents' perception that the victim should be blamed for being violated due to a poor judgment made on the part of the victim (e.g., walking into a bad neighborhood) or because the victim had provoked the actor (e.g., laughing at the actor) appeared to be the most pervasive. Indeed, the juveniles who endorsed the poor judgment and provocation themes tended to significantly make *more* violence attributional errors than did their counterparts. At the same time, juveniles who tended to cite attribution reasons that related to both person themes (i.e., self-control and provocation) tended to make less violent attributional errors.

The exploratory factor analysis revealed that the seven themes fell into the following four meta-themes: *disposition of actor and interaction with stimulus* (comprising self-control, violation of rights, and conflict resolution), *cognitive-based stimulus* (comprising irresponsibility and poor judgment), *emotionally-based stimulus* (comprising provocation), and *circumstance* (comprising fate). Interestingly, the *cognitive-based stimulus* was the most prevalent meta-theme, providing a further explanation for the high incidence of violent attributional errors.

The result that older juveniles were more likely to endorse the self-control theme--a person

attribution--than were the younger offenders suggests that violence attributions have a developmental context. In fact, it is likely that younger adolescents, who still utilize concrete thought, as opposed to abstract thought, are unable to use moral principles in making social decisions (Kohlberg, 1969). Thus, it is possible that violence attributional errors can be tied to developmentally-based frameworks such as Kohlberg's stages of moral development (Kohlberg, 1969). Thus, future research should explore further this possible link between violence attributional errors and level of moral reasoning. To the extent that moral reasoning is a determinant of violence attributions, increasing adolescents' beliefs in rules and the law as early as possible may be beneficial. This could have implications for school curricula.

A final goal of the current inquiry was to identify profiles of juvenile delinquents based on their violence attribution reasons. Using ipsative/cluster analyses, three profiles emerged (cf. Figure 2). These profiles provide compelling evidence that although juveniles are relatively homogenous with respect to the number of violence attributional errors made, they differ with respect to the reasons they provide for their causal attributions.

The current sample, although formed randomly, represented juvenile delinquents from a geographically-restricted region. Thus, the extent to which these findings generalize to juvenile offenders from other geographic regions is not clear, suggesting a need for replication using more diverse samples. Nevertheless, the present findings make an important contribution to the juvenile delinquency literature by simultaneously quantifying and qualifying violent attributions. Using a concurrent mixed-methodological data analysis technique allowed not only an estimation of the prevalence of violence attributional errors, but also facilitated a typology of the salient pieces of information they utilize in arriving at their attributions. Moreover, this *pragmatist* paradigmatic framework, as posited by Onwuegbuzie (2001), led to the determination of the structural relationships among the reason categories. These relationships are captured in Figure 1. This figure not only identifies which reason categories (i.e., themes) fall under the same umbrella (i.e., meta-themes), but also reveals which meta-themes are associated with the tendency to make/not to make violence attributional errors.

The mixed-methodological data analysis also facilitated the computation of effect sizes associated with violence attributional errors and reasons, as well as the identification of antecedent correlates of the juveniles' responses. Thus, future research in this area should continue using this *pragmatist* paradigmatic approach (Onwuegbuzie & Teddlie, in press). Such an approach will help to improve our understanding of factors that place adolescents at risk for violent behavior, which, hopefully will promote the identification of effective treatment programs for this vulnerable population.

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Table 1

Open-ended Response Categories With Selected Examples of Significant Statements of Attributions and Endorsement Rates

Violence Attribution Reason Theme	Attribution Category	Example	Endorsement Rate (%)
1. Self-control	Person	"He should've been able to control himself."	58.5
2. Violation of rights	Person	"Nobody wants to be raped."	42.7
3. Provocation	Stimulus	"Tom was picking at him."	76.8
4. Irresponsibility	Stimulus	"Shaq could've covered up his test."	81.7
5. Poor Judgment	Stimulus	"Shouldn't have got drunk.'	82.9
6. Fate	Circumstance	"Wrong place at the wrong time."	40.2
7. Conflict resolution	Circumstance	"They need to work it out."	30.5

Table 2

Means, Standard Deviations, t-values, and Effect Sizes Pertaining to Attributional Error Rate Differences for Each Theme

	Endorsers			Non-Endorsers				Effect Size
Theme	Mean	*SD*	*n*	Mean	*SD*	*n*	*t*	Cohen's *d*
Self-control	5.33	2.76	48	7.68	2.32	34	-4.03*	0.90
Violation of rights	4.86	2.48	35	7.38	2.59	47	-4.48*	0.99
Provocation	6.98	2.65	63	4.05	2.15	19	4.92*	1.15
Irresponsibility	6.37	2.77	67	6.00	3.12	15	0.43	0.13
Poor judgment	6.75	2.73	68	4.14	2.28	14	3.76*	0.98
Fate	6.79	2.39	33	5.98	3.06	49	1.34	0.29
Conflict resolution	5.48	2.69	25	6.67	2.82	57	-1.81	0.43

* statistically significant after the Bonferroni adjustment

Table 3

Summary of Themes and Factor Loadings from Maximum Likelihood Varimax Factor Analysis: Four-Factor Solution

Theme	Factor Loading[1] 1	2	3	4	Communality Coefficient
Conflict resolution	**.75**	-.02	.18	-.20	.64
Self-control	**.75**	-.11	.11	-.22	.71
Violation of rights	**.65**	-.32	-.19	.39	.91
Poor judgment	-.07	**.73**	-.21	-.38	.68
Irresponsibility	.44	**.70**	.06	-.07	.74
Fate	.17	-.07	**.93**	-.12	.92
Provocation	.07	.58	.24	**.71**	.64
Trace	1.79	1.49	1.06	1.00	5.34
% of variance explained	25.57	21.29	15.14	14.29	76.29

[1] Coefficients in bold represent loadings with the largest effect size within each theme, using a cut-off loading of 0.5 recommended by Hair et al. (1995).

Table 4

Canonical Solution for First Function: Relationship Between Seven Themes and Selected Demographic Variables

Variable	Standardized Coefficient	Structure Coefficient	Structure[2]
Theme:			
Self-control	-.482*	-.564*	.318
Violation of rights	-.592*	-.664*	.441
Provocation	.457*	.522*	.272
Irresponsibility	.118	.269	.072
Poor judgment	.166	.404*	.163
Fate	-.162	-.069	.005
Conflict resolution	.303*	-.043	.002
Demographic Variable:			
Age	.552*	-.590*	.348
Ethnicity	.255	.337*	.114
Number of prior arrests	.716*	.821*	.675

* loadings with effect sizes larger than .3 (Lambert & Durand, 1975)

Figure 1. Thematic Structure Pertaining to Juvenile Delinquents' Reasons for Their Violence Attributions

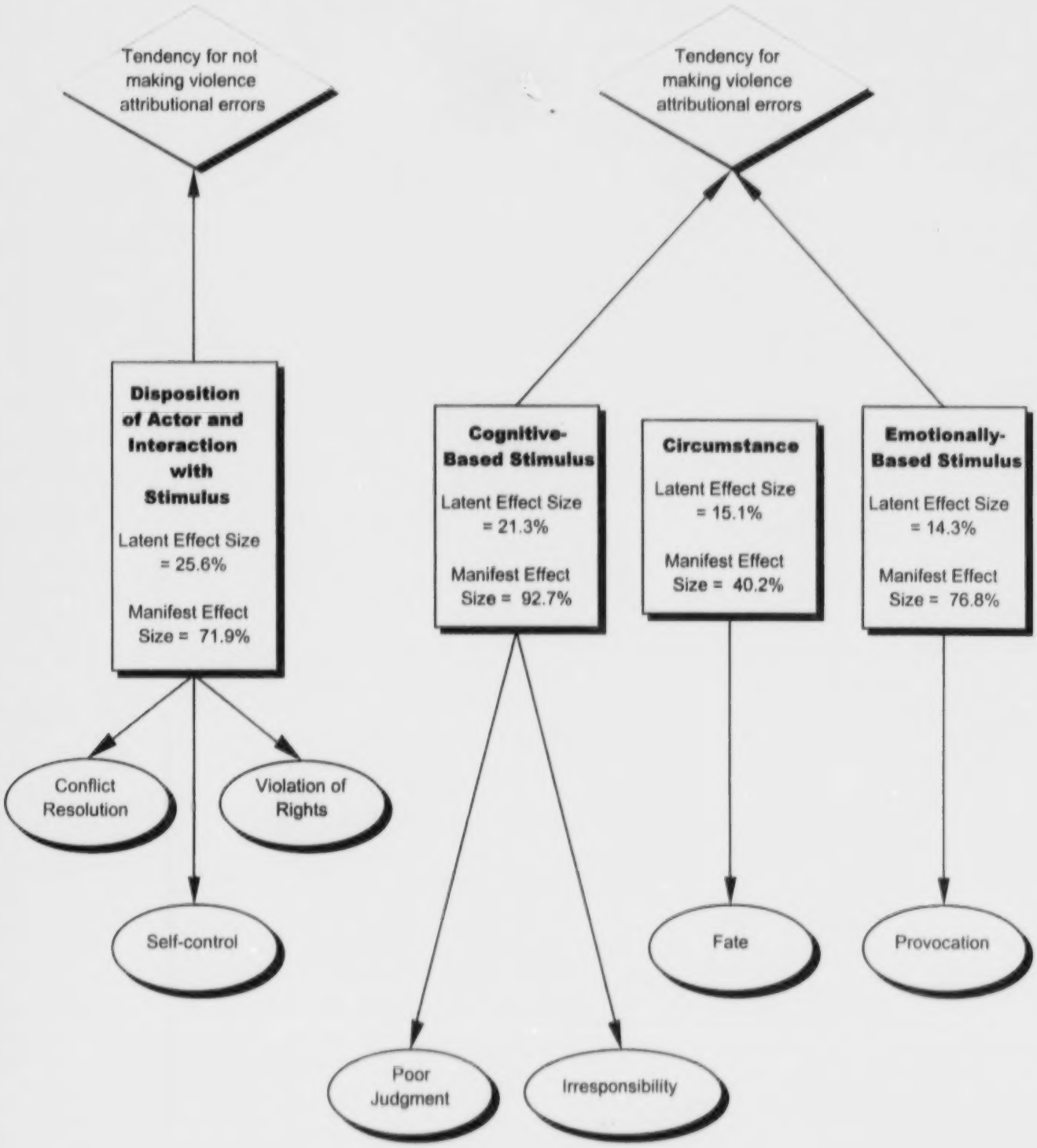

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Figure 2. Average Profiles Relating to Juvenile Delinquents' Reasons for Violence Attributions